

WHAT IS CLAIMED IS:

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1. A method for producing an automatically pH-adjusting dry powdered culture medium, comprising:
    - (a) determining the ratio of pH-opposing forms of buffer salts required to be added to said powder to automatically provide a desired final pH upon reconstitution of said powder with a solvent; and
    - (b) adding amounts of pH-opposing forms of buffer salts to said powder in the ratio determined in step (a).
  2. The method of claim 1, further comprising packaging said dry powdered medium.
  3. The method of claim 1, further comprising sterilizing said dry powdered medium.
  4. The method of claim 3, wherein said sterilization accomplished by irradiating said dry powdered medium with gamma rays until said medium is sterile.
  5. The method of any one of claims 1-3, wherein said medium comprises at least one monobasic and/or dibasic buffering salt.
  6. The method of claim 5, wherein said monobasic and/or dibasic buffering salt is a monobasic and/or dibasic phosphate salt.
  7. The method of claim 6, wherein at least one of said monobasic and/or dibasic phosphate salts is a sodium phosphate salt.
  8. The method of claim 6, wherein at least one of said monobasic or dibasic phosphate salts is a potassium phosphate salt.

9. The method of claim 1, wherein said dry powder medium contains sodium bicarbonate but does not liberate CO<sub>2</sub> upon storage.

10. An automatically pH-adjusting dry powdered culture medium produced by the method of any one of claims 1-3 and 9.

11. A complete dry powder culture medium that supports the cultivation of a cell *in vitro* upon reconstitution of the medium with a solvent without the addition of any supplemental nutrient components to said medium.

12. The medium of claim 11, wherein said medium is an automatically pH-adjusting medium.

13. The medium of claim 11, wherein said medium comprises one or more components selected from the group of components consisting of serum, one or more culture medium supplements, L-glutamine, insulin, transferrin, one or more hormones, one or more lipids, one or more growth factors, one or more cytokines, one or more neurotransmitters, one or more extracts of animal tissues, organs or glands, one or more enzymes, one or more proteins, one or more trace elements, one or more extracellular matrix components, one or more antibiotics, one or more viral inhibitors, and one or more buffers.

14. A method of cultivating a cell, comprising reconstituting an automatically pH-adjusting dry powdered medium with a solvent to form a culture medium solution, and contacting the cell with said liquid solution under conditions favoring the cultivation of the cell.

15. A method of cultivating a cell comprising preparing an automatically pH-adjusting dry powdered culture medium prepared according to the method any one of claims 1-3 and 9, reconstituting the medium with at least one solvent to form a culture medium solution, and contacting a cell with said solution under conditions favoring cultivation of the cell.

16. A method of cultivating a cell, comprising reconstituting the culture medium of claim 10 with a solvent to form a culture medium solution, and contacting the cell with said solution under conditions favoring the cultivation of the cell.

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17. A method of cultivating a cell, comprising reconstituting the culture medium of claim 11 with a solvent to form a culture medium solution, and contacting the cell with said solution under conditions favoring the cultivation of the cell.

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18. The method of any one of claims 14, 16 and 17, wherein said cell is a bacterial cell.

19. The method of claim 15, wherein said cell is a bacterial cell.

20. The method of any one of claims 14, 16 and 17, wherein said cell is a eukaryotic cell.

21. The method of claim 15, wherein said cell is a eukaryotic cell.

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22. The method of claim 20, wherein said eukaryotic cell is a yeast cell, a plant cell, or a cell line derived therefrom.

23. The method of claim 21, wherein said eukaryotic cell is a yeast cell, a plant cell, or a cell line derived therefrom.

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24. The method of claim 20, wherein said eukaryotic cell is an animal cell or a cell line derived therefrom.

25. The method of claim 21, wherein said eukaryotic cell is an animal cell or a cell line derived therefrom.

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26. The method of claim 24 or claim 25, wherein said animal cell is a mammalian cell or a cell line derived therefrom.

27. The method of claim 26, wherein said mammalian cell is a human cell or a cell line derived therefrom.

5 28. A kit for culturing a cell, comprising one or more containers containing an automatically pH-adjusting dry powdered culture medium prepared according to the method of any one of claims 1-3 and 9.

10 29. A kit for culturing a cell, comprising one or more containers containing the automatically pH-adjusting dry powdered culture medium of claim 10.

30. A kit for culturing a cell, comprising one or more containers containing the complete dry powdered culture medium of claim 11.

15 31. The kit of claim 28, wherein said kit further comprises one or more additional containers containing at least one additional component selected from the group consisting of at least one growth factor, at least one culture medium supplement, at least one animal tissue extract, at least one animal organ extract, at least one animal gland extract, at least one enzyme, at least one protein, at least one vitamin, at least one cytokine, at least one lipid, at least one trace element, at least one extracellular matrix component, at least one buffer, at least one antibiotic, and at least one viral inhibitor.

25 32. The kit of claim 29 or claim 30, wherein said kit further comprises one or more additional containers containing at least one additional component selected from the group consisting of at least one growth factor, at least one culture medium supplement, at least one animal tissue extract, at least one animal organ extract, at least one animal gland extract, at least one enzyme, at least one protein, at least one vitamin, at least one cytokine, at least one lipid, at least one

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trace element, at least one extracellular matrix component, at least one buffer, at least one antibiotic, and at least one viral inhibitor.

33. A composition comprising the automatically pH-adjusting culture medium of claim 10 and at least one cell.

5 34. The composition of claim 33, wherein said composition is a powder.

35. A composition comprising the complete culture medium of claim 11 and at least one cell.

10 *Sub a12* 36. The composition of claim 33 or claim 35, wherein said cell is selected from the group consisting of a bacterial cell, a yeast cell, a plant cell and an animal cell.

37. The composition of claim 36, wherein said animal cell is a mammalian cell.

15 38. The composition of claim 37, wherein said mammalian cell is a human cell.

39. The composition of claim 36, wherein said cell is an established or transformed cell line.

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